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Currothelphusa asserpes gen. nov., sp. nov. (Crustacea Decapoda Brachyura Sundathelphusidae) from a cave in Halmahera, Moluccas

by Peter K. L. NG

Abstract. — A new genus and species of freshwater crab of the family Sundathelphusidae, *Currothelphusa asserpes* gen. et sp. nov., is described from a cave on the island of Halmahera in the Indonesian Moluccas. It is allied to the genera *Sundathelphusa* and *Archipelothelphusa*, but easily separated by its more convex carapace, long ambulatory legs, well developed epigastric and postorbital cristae, and distinctly T-shaped male abdominal segment. The holotype has two pairs of male second pleopods, which is an anomalous condition.

Key-words. — Brachyura, Sundathelphusidae, *Currothelphusa asserpes*, new genus and new species, cavernicole, Halmahera, Moluccas, aberrant male, two pairs of male second pleopods.

Résumé. — Un nouveau genre et une nouvelle espèce de crabe d'eau douce de la famille Sundathelphusidae, *Currothelphusa asserpes* gen. et sp. nov., sont décrits d'une grotte de l'île de Halmahera (Moluques). Le genre est voisin des genres *Sundathelphusa* et *Archipelothelphusa* mais s'en distingue aisément par sa carapace plus convexe, par ses pattes ambulatoires allongées, par les crêtes épigastriques et postorbitaires de la carapace bien développées et par l'abdomen mâle distinctement en forme de T. L'holotype a deux paires de Pl2 mâles, ce qui est une anomalie.

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INTRODUCTION

The author recently had an opportunity to study the carcinological material collected by the 1988 French "MALU" Expedition to Halmahera (Indonesian Moluccas) and Thailand by the Association Pyrénéenne de Spéléologie and University Paul Sabatier, Toulouse. Two specimens were found to represent an undescribed species of sundathelphusid. This new species could not be satisfactorily classified in any of the known sundathelphusid genera, and a new genus has been established to accomodate it.

The description of this new genus and species, *Currothelphusa asserpes* gen. et sp. nov., forms the content of the present paper. Type specimens are deposited in the Muséum national d'Histoire naturelle (MNHN), Paris; and the Zoological Reference Collection (ZRC) of the Department of Zoology, National University of Singapore. Measurements given are of the carapace width and length respectively. The male first and second pleopods are abbreviated as the G1 and G2s respectively. Morphological terminology essentially follows that used by NG (1988).

Family SUNDATHELPHUSIDAE Bott, 1969

CURROTHELPHUSA gen nov.

DIAGNOSIS : Carapace transverse, broader than long, surfaces relatively smooth, glabrous, distinctly convex, especially branchial regions which appear swollen, lateral parts of anterolateral and posterolateral regions with distinct but very low and almost smooth oblique striae. Epigastric and postorbital cristae well developed and distinct, separated, not confluent, anterolateral margin strongly convex, cristiform, external orbital angle sharply triangular, low but distinct, almost confluent with anterolateral margin, outer margin almost straight or slightly concave, epibranchial tooth indistinct. Posterolateral margin distinctly converging. Ambulatory legs greatly elongated, especially merus, propodus and dactylus, merus without distinct subterminal spine, as long as or slightly longer than length of carapace. Male abdomen strongly T-shaped, lateral margins of sixth and seventh segments distinctly concave. G1 stout, slightly sinuous, directed outwards, terminal segment cylindrical, about one fifth length of subterminal segment. G2 distal segment (= flagellum) well developed, shorter than elongate basal segment.

TYPE SPECIES : *Currothelphusa asserpes* sp. nov.

ETYMOLOGY : The generic name is derived from the Latin "currere" for run, and the name "Thelphusa", alluding to the cursorial abilities of the crab as suggested by its long ambulatory legs. The gender is feminine.

Currothelphusa asserpes sp. nov.

(Fig. 1-2; pls. 1-2)

DIAGNOSIS : As for genus.

MATERIAL EXAMINED : Halmahera, Indonesian Moluccas, Batu Lubang cave, near village of Sagea, in small pond or on clay, "MALU 40", leg. L. DEHARVENG, 20 to 28.vii.1988 : holotype ♂ 43.0 by 33.2 mm (MNHN-B20991), paratype ♂ 30.1 by 24.0 mm (ZRC 1989.2156).

DESCRIPTION OF MALE HOLOTYPE

Carapace transverse, broader than long, surfaces convex, glabrous, regions distinct, branchial regions inflated. Cervical groove broad but not very deep, extending from epibranchial tooth to well developed H-shaped central depression. Epigastric cristae well developed, but margins not sharp, straight, slightly forward of postorbital, separated by deep groove. Postorbital cristae distinct, sharp, becoming low and indistinct towards anterolateral margin, separated from epigastric by small, shallow and rather indistinct notch. Frontal margin straight or slightly sinuous, frontal median triangle distinct, upper margin strongly developed, almost confluent with lateral margins. External orbital angle triangular, outer margin twice length of inner, not projecting beyond frontal margin. Anterolateral margin distinctly convex, slightly crested, margins almost smooth, epibranchial tooth well developed

and distinct but not very sharp, separated from external orbital angle by distinct V-shaped notch. Posterolateral margin slightly convex, converging. Anterolateral and posterolateral regions lined with numerous distinct, low, oblique striae. Suborbital, sub-branchial, subhepatic and pterygostomial regions rugose. Posterior margin of epistome with well developed median triangle, tip rounded. Third maxilliped with distinct oblique ischial sulcus, closer to inner margin, exopod with well developed flagellum extending beyond width of merus. Mandibular palp with two terminal folds.

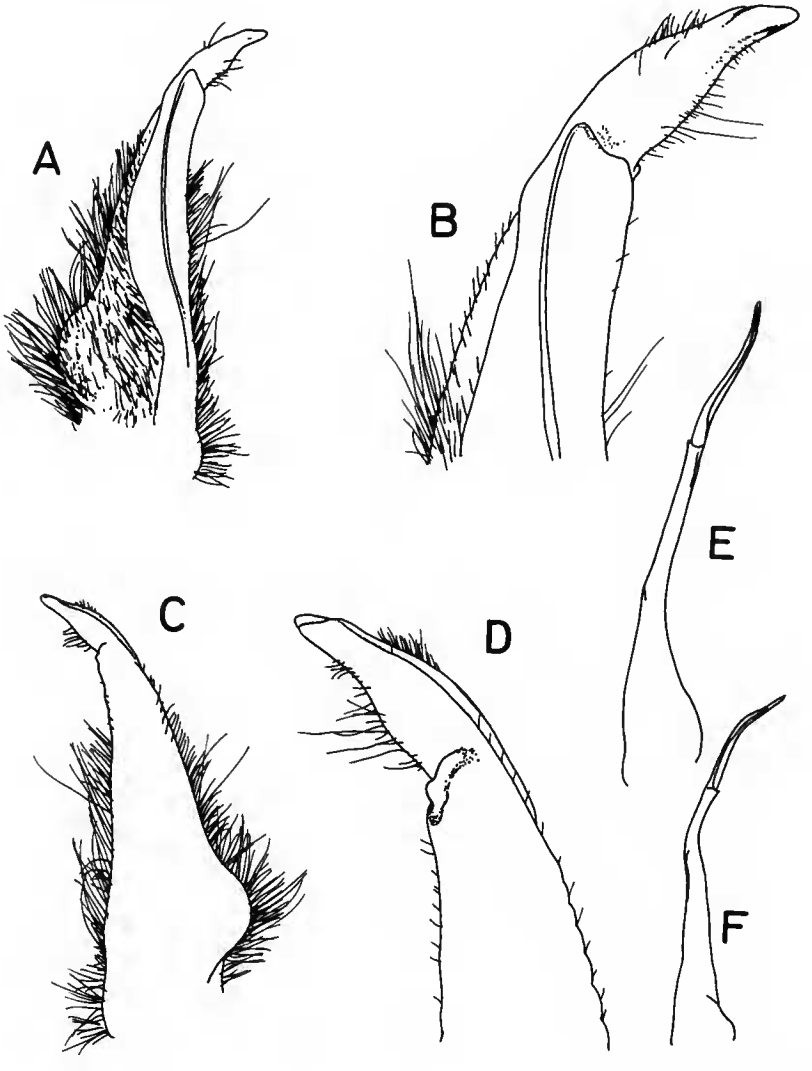

FIG. 1. — *Currothelphusa asserpes* gen. et sp. nov., holotype male, 42.6 by 32.8 mm (MNHN-B20991). A, B, G1 (ventral view); C, D, G1 (dorsal view); E, first G2; F, second G2.

Chelipeds asymmetrical, left larger, palm appearing inflated, fingers as long as or shorter than palm, surfaces rugose, lined with oblique striae. Cutting edge of fingers with numerous closely packed teeth of varying sizes, larger on pollex, tips of fingers strongly hooked, beige-coloured.

Ambulatory legs very long, especially meri, propodi and dactyli, meri of first three pairs (detached) as long as or slightly longer than length of carapace. Second pair longest. Margins of merus crested, slightly serrated, without distinct subterminal spine.

Ventral surfaces smooth, male abdomen distinctly T-shaped, segments gradually narrowing from one to seventh, first segment reaching to base of last pair of ambulatory legs. Sixth segment longer than seventh, lateral margins of sixth and seventh concave, tip of seventh rounded. G1 stout, subterminal segment gradually tapering from broad base, terminal segment approximately one fifth length of subterminal, cone-shaped, bent outwards. Two pairs of G2s present (anomalous), first pair in front of and better developed than second, distal segments of both pairs shorter than their respective basal segments.

ETYMOLOGY : The specific name is derived from the Latin "asser" for pole, and "pes" for leg, alluding to the long slender ambulatory legs of the species.

REMARKS

The smaller male paratype agrees with the holotype male in most respects except that its carapace convexity is less pronounced and the anterolateral margins less convex. Its chelipeds are also approximately equal in size. The general shape of its G1 agrees with the holotype but the terminal segment is straighter and almost in line with the subterminal segment and is not distinctly bent outwards at an angle.

Currothelphusa asserpes gen. et sp. nov. is remarkable mainly because of its long

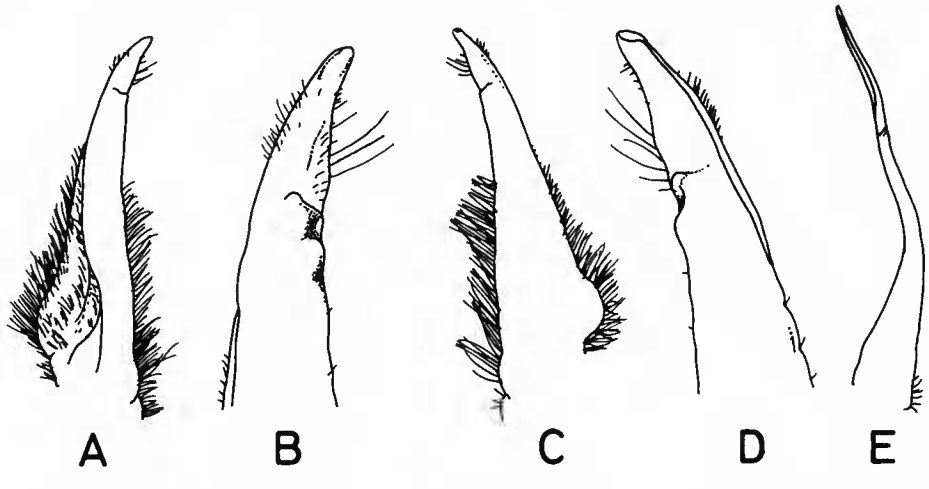

FIG. 2. — *Currothelphusa asserpes* gen. et sp. nov., paratype male, 30.1 by 24.0 mm (ZRC 1989.2156). A, B, G1 (ventral view); C, D, G1 (dorsal view); E, G2.

ambulatory legs. In general, the carapace is similar to some species of the genus *Sundathelphusa* Bott, 1969, but none of these species have ambulatory legs as long as those on *Currothelphusa*. With regards to the carapace, *C. asserpes* is closest to *Sundathelphusa cassiope* (De Man, 1902), and *S. rubra* (Schenkel, 1902), both from Sulawesi (Celebes), especially the former. NG & STUEBING (1989) commented that of the eight species and subspecies of *Sundathelphusa* recognised by BOTT (1969, 1970), two, *S. minahassae* (Schenkel, 1902), and *S. halmaherensis* (De Man, 1902), as well as *S. tenebrosa* Holthuis, 1979, and *S. aspera* Ng & Stuebing, 1989 from Sabah, Borneo, should perhaps be separated on account of their more rugose carapaces and well developed epigastric and postorbital cristae. These species however, have much flatter and much more rugose carapaces, appearing quite different externally compared to *Currothelphusa*. Although *C. asserpes* has the general carapace form of the remaining *Sundathelphusa* species, none have the epigastric and postorbital cristae as well developed. These differences, together with the long ambulatory legs of the Halmahera specimens, have prompted the author to establish a new genus, *Currothelphusa*, allied to but distinct from *Sundathelphusa*.

The only other sundathelphusid known from Halmahera, *S. halmaherensis* (De Man, 1902) was described on the basis of a small male specimen (see BOTT, 1970; HOLTHUIS, 1979). The carapace and legs of this species however, are very different from *Currothelphusa asserpes*, and there can be no doubt that they are separate taxa.

As to its long ambulatory legs, *Currothelphusa* resembles the genus *Archipelothelphusa* Bott, 1969. The latter genus is known on the basis of four species from the Philippines (BOTT, 1970; TAKEDA, 1983). It is perhaps closest to *A. sutteri*, known only from a single female collected from Luzon, especially with regards to its swollen and rather smooth carapace. In this species however, the epigastric and postorbital cristae are confluent, with the epigastric cristae sharp, and slightly below the postorbital, unlike *C. asserpes*. As it is, the present author has reservations about classifying *A. sutteri* in the genus *Archipelothelphusa*, as well as with BOTT's (1970) synonymising of several Filipino species under *A. grapsoides* (H. Milne Edwards, 1853). At least one of these synonymies, *Para-Bary-Thelphusa grapsoides longipes* Balss, 1937, appears to be unwarranted (unpublished data). *Archipelothelphusa* has to be revised before more detailed comparisons with *Currothelphusa* can be made.

The G1 structures of all three genera, although helpful in separating most of the species, are however, not very useful in delimiting the various genera due to their general similarity. Moreover, as a comparison of the G1 structures of the two type males of *C. asserpes* has shown, they may vary slightly within a species.

Perhaps one of the most interesting features of the holotype male is the observation of two pairs of G2s, not previously reported for any brachyuran. Both pairs are on the second male abdominal segment. The second pair, although less well formed than the first, are clearly functional and not degenerated or otherwise. GORDON (1963) reported an anomalous spider crab (*Pleistacantha moseleyei*) as having five pairs of male pleopods; the single pair of G1s being normal, but with four pairs of G2s, all of which had a distinct exopodite each. The G2s of the type specimen of *Currothelphusa asserpes* however, do not have any trace of exopodites. The anomalous pair of G2s in *C. asserpes* could have arisen through a faulty or aberrant moult, in which the pre- (or post-) moult pair of G2s were inadvertently retained together with the post- (or pre-) moult pair.

The type specimens of *C. asserpes* were described as being pink in life. Both specimens

were collected in caves, but other than its unusually long legs and relatively paler coloration, this species is unlikely to be an obligate cavernicole as its eyes are not reduced to any degree (see HOLTHUIS, 1979; NG & GOH, 1987). They are also probably found in suitable epigeal habitats. DEHARVENG (*in litt.* 13 September 1988) wrote that these crabs were quite common in the cave, in small ponds far from, as well as near or in the underground cave river.

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PLATE 1

Currothelphusa asserpes gen. et sp. nov., holotype male, 42.6 by 32.8 mm (MNHN-B20991). A, dorsal view; B, ventral view; C, frontal view; D, chelae.

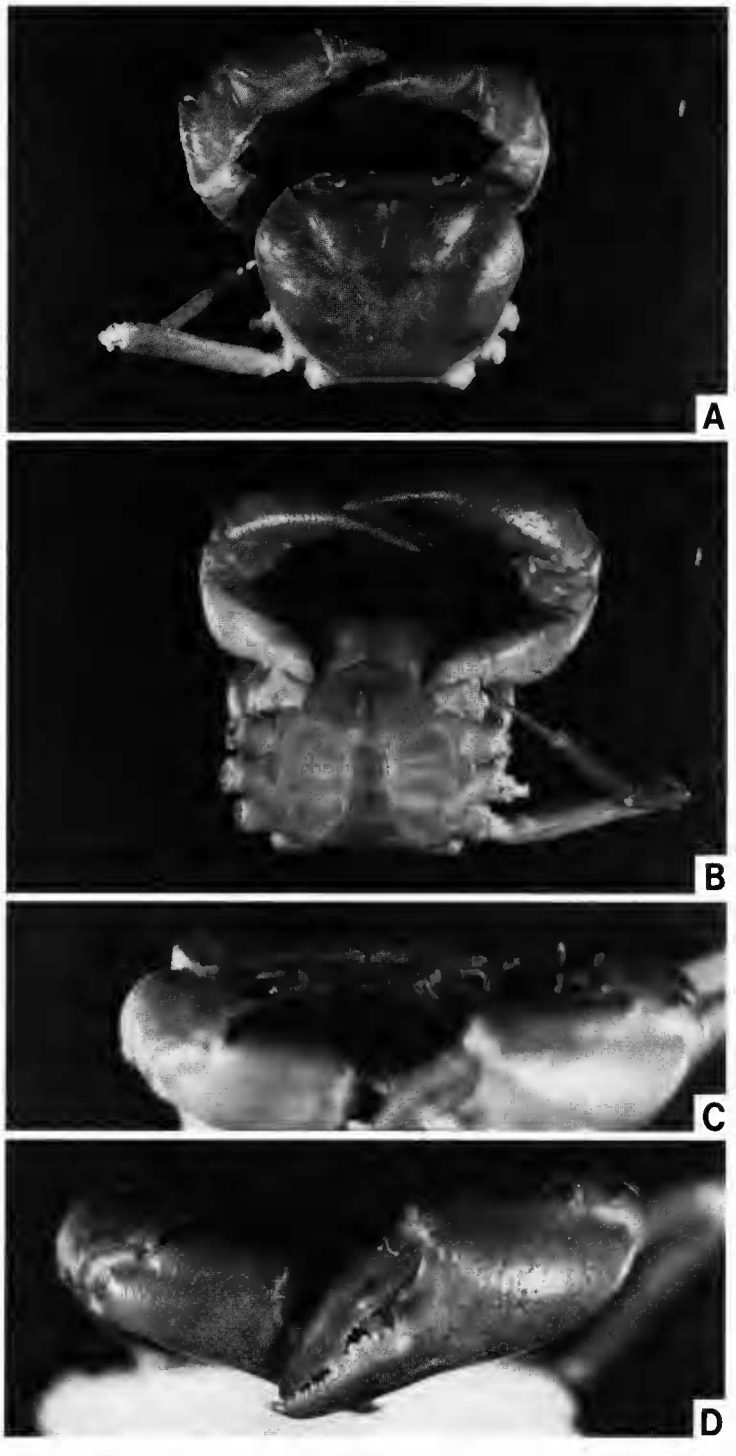

PLATE I

PLATE 2

Currothelphusa asserpes gen. et sp. nov., paratype male, 30.1 by 24.0 mm (ZRC 1989.2156). A, dorsal view; B, ventral view; C, frontal view.

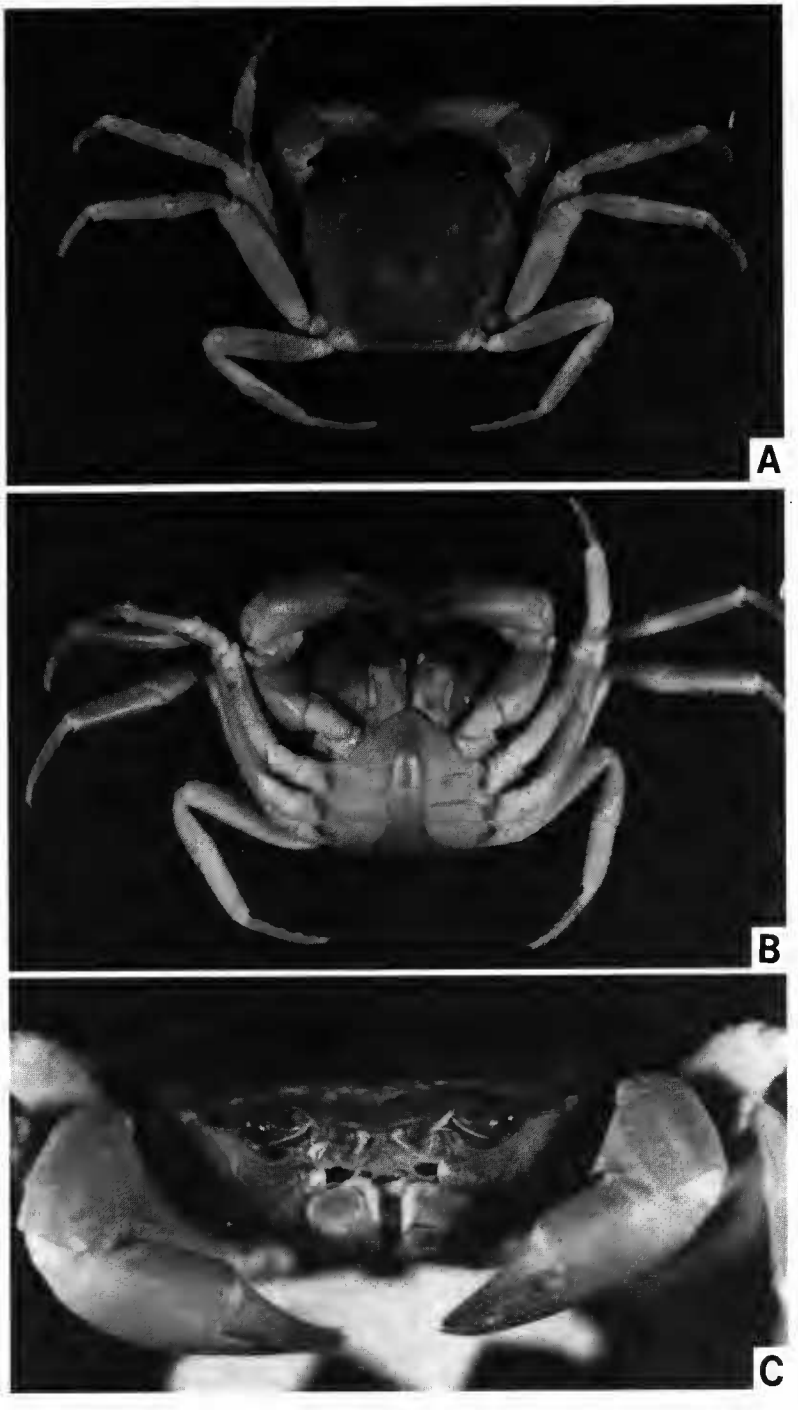

PLATE II